

We claim:

1. A non-naturally occurring plant or plant part from said plant comprising elevated levels of one or more nitrogen utilization proteins specifically localized to the root epidermis.
2. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the elevated levels of one or more nitrogen utilization proteins are at least two-fold higher.
3. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the elevated levels of one or more nitrogen utilization proteins are at least three-fold higher.
4. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the elevated levels of one or more nitrogen utilization proteins are at least five-fold higher.
5. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the elevated levels of one or more nitrogen utilization proteins are at least ten-fold higher.
6. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the plant is transgenic.
7. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the plant is selected from the group comprising corn, wheat, rice, barley, canola, soybean, cotton, alfalfa, safflower, tomato and potato.
8. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the plant is canola.
9. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the plant is corn.

10. The non-naturally occurring plant or plant part from said plant of claim 1 wherein the plant comprises a transgene.

11. The non-naturally occurring salt tolerant plant or plant part from said plant of claim 10 wherein the transgene comprises a first nucleic acid encoding a nitrogen utilization protein operably linked to a second nucleic acid comprising a root-epidermis-specific promoter.

12. The non-naturally occurring plant or plant part from said plant of claim 11 wherein the nitrogen utilization protein is selected from the group consisting of the following a fungal nitrate reductase, a mutant nitrate reductase lacking post-translational regulation, glutamate synthetase-1, a glutamate dehydrogenase, an aminotransferase, a high affinity nitrate transporter, a low affinity nitrate transporter, an ammonia transporter and an amino acid transporter.

13. The non-naturally occurring plant or plant part from said plant of claim 11 wherein the nitrogen utilization protein is selected from the group consisting of alanine amino transferase and aspartate amino transferase.

14. The non-naturally occurring plant or plant part from said plant of claim 11 wherein the promoter is selected from the group consisting of the LeAMT1 promoter, the LeNRT1 promoter, the GmNRT2 promoter, the KDC1 promoter, the PHT1 promoter, the GOGAT promoter, the OsRAB5 promoter, and the ALF5 promoter.

15. The non-naturally occurring plant or plant part from said plant of claim 11 wherein the promoter is the btg-26 promoter.

16. A seed of a non-naturally occurring plant wherein said plant comprises elevated levels of one or more nitrogen utilization proteins specifically localized to the root epidermis.

17. The seed of a non-naturally occurring plant of claim 16 wherein the elevated levels of one or more nitrogen utilization proteins are at least two-fold higher.

18. The seed of a non-naturally occurring plant of claim 16 wherein the plant is transgenic.

19. The seed of a non-naturally occurring plant of claim 16 wherein the plant is selected from the group comprising corn, wheat, rice, barley, canola, soybean, cotton, alfalfa, safflower, tomato and potato.

20. The seed of a non-naturally occurring plant of claim 16 wherein the plant is canola.

21. The seed of a non-naturally occurring plant of claim 16 wherein the plant is corn.

22. The seed of a non-naturally occurring plant of claim 16 wherein the plant comprises a transgene.

23. The seed of a non-naturally occurring plant of claim 22 wherein the transgene comprises a first nucleic acid encoding a nitrogen utilization protein operably linked to a second nucleic acid comprising a root-epidermis-specific promoter.

24. The seed of a non-naturally occurring plant of claim 23 wherein the nitrogen utilization protein is selected from the group consisting of the following a fungal nitrate reductase, a mutant nitrate reductase lacking post-translational regulation, glutamate synthetase-1, a glutamate dehydrogenase, an aminotransferase, a high affinity nitrate transporter, a low affinity nitrate transporter, an ammonia transporter and an amino acid transporter.

25. The seed of a non-naturally occurring plant of claim 23 wherein the nitrogen utilization protein is selected from the group consisting of alanine amino transferase and aspartate amino transferase.

26. The seed of a non-naturally occurring plant of claim 23 wherein the promoter is selected from the group consisting of the LeAMT1 promoter, the LeNRT1 promoter, the GmNRT2 promoter, the KDC1 promoter, the PHT1 promoter, the GOGAT promoter, the OsRAB5 promoter, and the ALF5 promoter.

27. The seed of a non-naturally occurring plant of claim 23 wherein the promoter is the btg-26 promoter.

28. A method of generating a plant according to claim 1 comprising introducing at least one nucleic acid encoding a nitrogen utilization protein operably linked to a root-epidermis-specific promoter and producing a plant comprising elevated levels of one or more nitrogen utilization proteins specifically localized to the root epidermis.

29. The method of claim 28 wherein the nitrogen utilization protein is selected from the group consisting of the following a fungal nitrate reductase, a mutant nitrate reductase lacking post-translational regulation, glutamate synthetase-1, a glutamate dehydrogenase, an aminotransferase, a high affinity nitrate transporter, a low affinity nitrate transporter, an ammonia transporter and an amino acid transporter.

30. The method of claim 28 wherein the nitrogen utilization protein is selected from the group consisting of alanine amino transferase and aspartate amino transferase.

31. The method of claim 28 wherein the promoter is selected from the group consisting of the LeAMT1 promoter, the LeNRT1 promoter, the GmNRT2 promoter, the KDC1 promoter, the PHT1 promoter, the GOGAT promoter, the OsRAB5 promoter, and the ALF5 promoter. .

32. The method of claim 28 wherein the promoter is the btg-26 promoter.